

REMARKS

Applicant thanks the Patent Office for the careful attention accorded this application and respectfully requests reconsideration in view of the present Amendment set forth above and remarks set forth below.

In response to the Office Action dated October 20, 2004, Applicant has canceled claims 1-7 without prejudice or disclaimer, and added new Claims 8-13 for continued prosecution. Applicant reserves the right to file one or more continuation applications based on the canceled claims.

Independent claim 8 is directed to a novel method of treating monocular amblyopic conditions within a patient's human vision system having left and right visual channels so that persistent binocular vision is achieved. The method involves (a) applying a complex afocal binocular lens system to an amblyopic eye of a patient, including a contact lens on the amblyopic eye, to provide the amblyopic eye with more magnification than the non-amblyopic eye during treatment so as to over-stimulate the neural pathways along the visual channel of the amblyopic eye, without applying occlusion therapy or penalization therapy along the visual channel not afflicted by amblyopia. During the course of treatment, the powers of the patient's human vision system including the patient's power of stereoscopic vision, are tested (i.e. examined), and the optical correction provided by said complex afocal binocular lens system is adjusted to enable good functional vision bilaterally. When, during the course of treatment, the stereoscopic power of the patient's human vision system approaches a predetermined amount of disparity, then the magnification in said complex afocal binocular lens system before the amblyopic eye is adjusted so as to enable a state of harmony to be attained between the left and right visual channels of the patient's human vision system, at which a state of persistent binocular vision is achieved in the patient.

Independent claim 12 is directed to a method of treating binocular amblyopic conditions within a patient's human vision system having left and right visual channels so that persistent binocular vision is achieved. The method involves applying pair of reverse-afocal binocular

lens systems before a pair of amblyopic eyes in a patient so as to treat binocular amblyopia. This step involves applying a contact lens on each amblyopic eye to provide the more amblyopic eye with magnification and the less amblyopic eye with minification during treatment so as to over-stimulate the neural pathways along the visual channel of more amblyopic eye and under-stimulate the neural pathways along the visual channel of the less amblyopic eye, in comparison to the more amblyopic eye. During the course of treatment, the powers of the patient's human vision system, including the patient's power of stereoscopic vision, are tested (i.e. examined), and the optical correction provided by said pair of reverse-afocal binocular lens systems is adjusted to enable good functional vision bilaterally. When the patient's power of stereoscopic vision approaches a predetermined amount of disparity, then the magnification in said pair of reverse-afocal binocular lens systems before the patient's eyes is adjusted so as to enable a state of harmony to be attained between said left and right visual channels of the patient's human vision system, at which a state of persistent binocular vision is achieved in the patient.

Applicant submits herewith a Terminal Disclaimer to overcome any obviousness-type double patenting rejection in view of Applicant's copending Application No. 10/885,483.

Applicant will also file an Information Disclosure Statement (IDS) in the present Application shortly, under separate transmittal letter.

Applicant has reviewed the prior art cited in the present Application and none of these prior art references, when taken alone or in combination with each other, disclose, teach or suggest the novel method of treating amblyopic conditions in patients which teaches (i) the express abandonment of traditional methods of occlusion and penalization therapies (e.g. using eye patches and atrophine drops) and (ii) the adoption of a novel regimen of selective magnification (in amblyopic eyes of patients) and minification (in the non- or less- amblyopic eyes thereof) ---achieved by applying complex afocal binocular lens systems with contact lens elements applied to the eyes of the patient-- so as to stimulate the visual channels of the patient's human vision system during the course of treatment, and thereby enabling a state of harmony to be attained between the left and right visual channels of the patient's human vision

system, at which a state of persistent binocular vision is achieved in the patient.

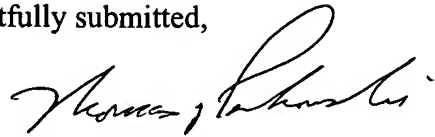
No such innovative teachings, or remarkable results achieved by Applicant in his practice of the claimed invention, are disclosed, taught or hinted at in the prior art.

In view, therefore, of the Amendment and Remarks set forth above, Applicant firmly believes that the present invention, defined by Claims 8-14, is neither anticipated by, nor rendered obvious in view of the prior art of record, and that the present application is now believed to be in all respects in condition for allowance.

Favorable action is earnestly solicited.

Applicant submits in payment of the requisite Terminal Disclaimer and Extension of Time fees of \$575.00, Thomas J. Perkowski, Esq., P.C. Check No. 4892 in the same amount. The Commissioner is also authorized to charge any fee deficiencies or overpayments to Deposit Account 16-1340.

Respectfully submitted,



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P.O. Box 1450
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Thomas J. Perkowski, Esq.

Dated: April 20, 2005



STEP OF METHOD OF TREATING AMBLYOPIA

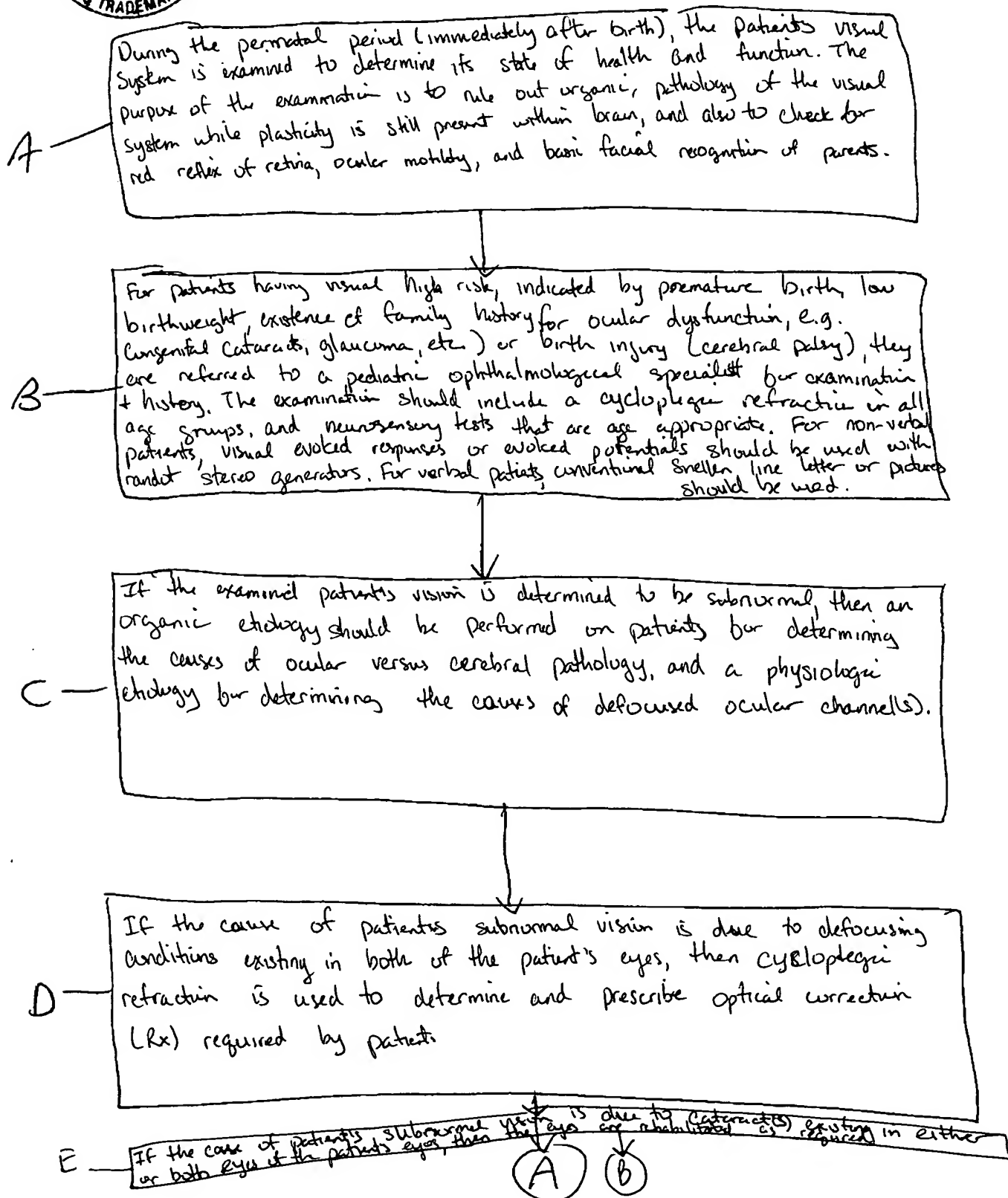


FIG. 5A

A



F1

E

If subnormal vision exists in only one of the patient's eyes (i.e. visual channels), then the patient's condition is diagnosed as "monocular amblyopia" and this condition is treated according to the method specified by steps H1 through P1 indicated below, and using the optical apparatus shown in Fig. 6, comprising a lens supported in an eyeglass frame and a contact lens supported upon the patient's eye, in axial alignment with the eyeglass lens.

G1.

Cycloplegic refraction is performed to determine appropriate initial optical correction of one or both visual channels of the patient's visual system using eyeglasses.



H1

H1

With the patient wearing appropriate optical correction (i.e. eye-glasses), the "depth of suppression" in patient's visual system is determined by obtaining a baseline refractive error on patient, using for example, (i) Evoked Visual Potential measurement for non-verbal patients (e.g. expressed in millivolts), or (ii) Snellen chart measurements for verbal patients (i.e. expressed in differences in patient resolution of lines on the Snellen chart).



I1

I1

If the patient's depth of suppression is determined to be "deep" (i.e. greater than three lines of Snellen chart line resolution or verbal patients, or 1/2 the energy amplitude along the visual channel of the non-amblyopic eye for non-verbal patients), then parttime occlusion therapy is used with full optical correction (using prescription eyeglasses) over the amblyopic eye only until the depth of suppression with the patient's visual system is within 2 Snellen lines (for verbal patients) or 2/3 of the energy amplitude of the patient's evoked visual potential along the visual channel of the non-amblyopic eye (for non-verbal patients). This therapy will not be longer than two hours per day, with the dominant eye always being covered. During this therapy, the full eyeglass correction is to be worn.



J1

J1

When the depth of suppression in the patient's visual system is at the level indicated in step I1 above, then the method teaches applying a complex a focal binocular lens (i.e. difference in magnification) by deliberately giving about 5% more magnification to the amblyopic eye by way of the complex a focal binocular lens system applied thereby and thus exciting the cells of the retina of the amblyopic eye and over stimulating the nerves in the visual channel thereof, while maintaining visual channel equalization.

B1

FIG. 5B

501

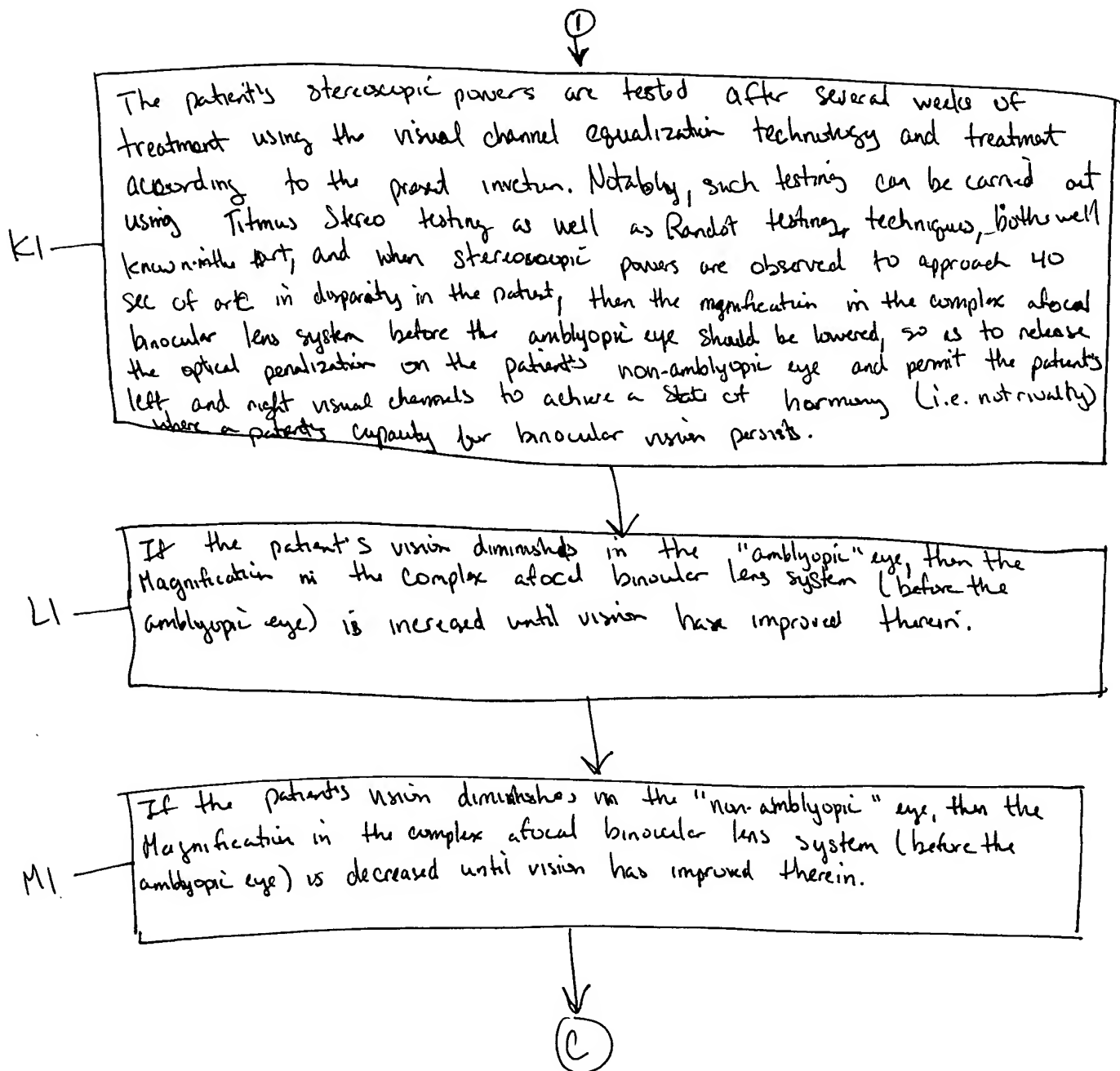


FIG. 5B2

③

M2 — Periodically (e.g. every 2 months), the patient's eyes are re-examined for any changes in visual channel harmony, and if changes are observed, then the appropriate optical correction is bilaterally adjusted to maintain good functional vision bilaterally.

N1 — Steps J1, K1, L1 and M1 are repeated until patient's vision has stabilized and stereopsis is strong and persistent --- i.e. harmony among both left and right visual channels is attained.

O1 — When the patient's vision has stabilized and stereopsis is strong and persistent (i.e. harmony among left, and right visual channels is attained), then both of the patient's eyes are optically equalized by applying appropriate corrective optics, shown in Fig. 6, (as determined by cycloplegic refraction), employing (i) a complex atocal binocular lens system before the originally amblyopic eye to provide magnification and sustain visual channel harmony within the patient's vision system, or (ii) less preferably, a complex reverse-atocal lens system before the formerly non-amblyopic eye to provide minification and sustain visual channel harmony within the patient's vision system.

P1 — Periodically (e.g. every 2 months) the patient's eyes are re-examined for any changes in visual channel harmony, and if changes are observed, then steps J1, K1, L1, M1, and O1 are re-performed.

F2 — If subnormal vision exists in both of the patient's eyes (i.e. visual channels), then the patient's condition is diagnosed as "binocular amblyopia" and treated according to the method specified by steps G2 through P2 indicated below, and using the optical apparatus shown in Fig. 7.

G2 — Cycloplegic refraction is performed on the patient to determine appropriate initial optical correction of both visual channels (i.e. eyes) of patient's visual system using conventional eyeglasses with Rx lenses.

④

FIG. 5C

①
↓

H2 With the patient wearing appropriate optical correction (e.g. conventional eyeglasses with Rx lenses), the "depth of suppression" in patient's visual system is determined by obtaining a baseline reference on patient using, for example, (i) Evoked Visual Potential (EVP) measurement for non-verbal patients (i.e. expressed in millivolts), or (ii) Snellen chart measurements for verbal patients (i.e. expressed in difference in patient resolution of lines on the Snellen chart).

I2 If the patient's depth of suppression is determined to be "deep" in both visual channels (i.e. greater than three lines of Snellen chart line resolution for verbal patients, or 1/2 the energy amplitude along the visual channel of the non-amblyopic eye for non-verbal patients), then the maximum photonic energy stimulation should be achieved in both visual channels of the patient's visual system.

J2 A complex afocal binocular lens system is applied bilaterally (i.e. to each eye) to the patient's eyes, as shown in Fig. 7, so as to deliberately provide magnification to both visual channels of the patient's visual system while maintaining visual channel equalization.

K2 The patient's stereoscopic powers are tested after several weeks of treatment, and when stereopsis in the patient approaches 40-50 sec of arc in disparity, then such optical treatment is maintained to achieve good functional vision, and visual channel harmony.

L2 When the patient's vision has stabilized and stereopsis is strong and maintained (i.e. harmony among visual channels attained), visual equalization of both of the patient's eyes (i.e. visual channels) is continued throughout the patient's lifetime, to ensure visual channel harmony and thus maintenance of binocular vision within the patient's vision system.

FIG. 5D

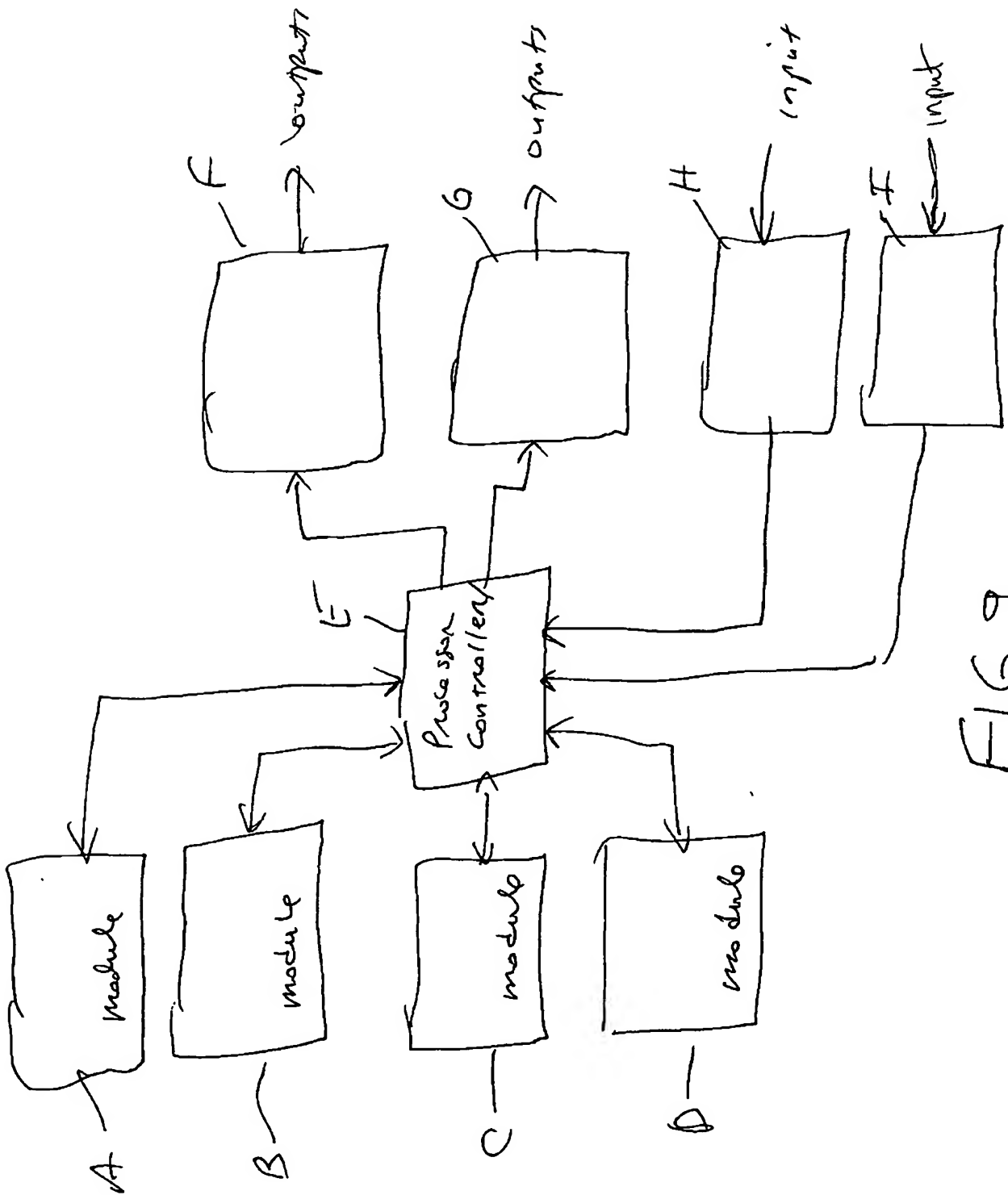


FIG 9.